

An Evaluation of the Rehabilitation Efforts for the Eastern Oyster, *Crassostrea virginica*, in the Chesapeake Bay

Crassostrea virginica, a native to the Chesapeake Bay, is a reef building oyster, which forms the basis for the ecosystem of the bay. At present the oyster populations are only about 1% of what they were when the area was first settled. The current decline of the oyster populations can be attributed to over-fishing, disease (MSX and Dermo), and silting and nutrient run-off leading to poor water quality. To show the scope of the decline, one only has to look at the filtering capacity of the oyster populations. Prior to the 1900's the entire bay could be filtered in 3.3 days, and now it takes 325 days to do the same task (Newell, 1988). In an attempt to rebuild the stock, Maryland and Virginia have started a number of bay-wide initiatives. These include: (1) the introduction of a new species of oyster, *Crassostrea ariakensis*, commonly known as the Suminoe oyster; (2) the husbandry of oysters for both commercial and ecosystem purposes; (3) sanctuaries reserved for the broodstock; and (4) shell replenishment efforts, where oyster shells are gathered into a reef formation as a means of increasing the habitat. Given the number of initiatives within the different jurisdictions, it is difficult to determine what is best for the bay ecosystem. In evaluating the possible efforts of the states, one approach would be to weigh the positive and negative aspects of each initiative, with the goal of finding the best effort for this ecosystem. An additional technique, which may be used to supplement the first technique, would be to compare the efforts in the Chesapeake Bay with those in other states. The overall goal of this work is to determine the best strategy for the Chesapeake Bay and to promote policies which will strive for the improvement of the bay ecosystem.